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HAPPY MARRIAGE, HAPPY BABY?: MARITAL QUALITY AND PERCEPTIONS
OF INFANT TEMPERAMENT

A Thesis Presented

by

ELIZABETH KRISTINE TURNER

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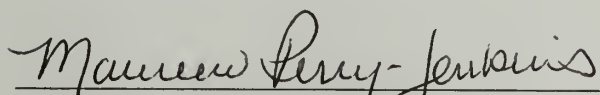
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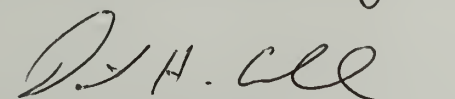
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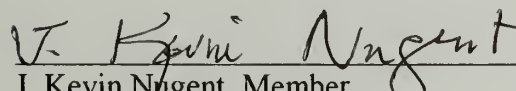
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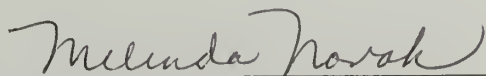

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CHAPTER 1

INTRODUCTION

Temperament characteristics of an infant, which includes such qualities as their degree of fussiness, frequency of smiling and laughing, and degree of soothability, have been linked to future child behavior and adjustment (Sanson, Oberklaid, Pedlow, & Prior, 1991; Shaw, Vondra, Hommerding, Keenan & Dunn, 1994). The literature often describes infant temperament as a relatively stable biological aspect of the child that affects his or her development and interactions with others (e.g., Rothbart, 1986; Thompson, 1999). However, the social context of children's development, such as their parents' characteristics, marital quality, family structure and social class may also shape parents' perceptions of infant temperament, highlighting the bi-directional influences of biology and environmental context on child development.

Research has associated "difficult" infant temperament, which includes such characteristics as irregular sleep and eating patterns, high levels of distress, problems adjusting to new situations, and negative mood, with future school and relationship difficulties (Sanson et al., 1991). Additional factors, including the "fit" between the child's temperament and his or her environment may also influence the development of such behavioral problems (Lamb, Hwang, Ketterlinus, & Fracasso, 1999). For example, "difficult" children in supportive environmental contexts, in which parents adjust their own behavior and expectations to meet their child's temperamental characteristics, experience fewer negative outcomes than children in less supportive environments. Moreover, infant temperament exerts its greatest impact on future development and

behavioral difficulties in combination with other risk factors, including marital conflict and low SES (Sanson et al., 1991; Shaw et al., 1994).

Methods of assessing temperament typically involve asking parents to accurately rate their infant's behavior. The validity of such parent-report measures, however, has been criticized (Vaughn, Joffe, Barglow, Bradley, & Seifer, 1987). Several researchers have questioned whether such reports actually measure objective qualities of the infant or, rather, subjective characteristics of the parent or rater (e.g., Mednick, Hocevar, Baker, & Schulsinger, 1996; Vaughn et al., 1987). Other researchers contend that parent reports contain both subjective reports as well as objective reports, consistent with ratings of objective observers (Bates & Bayles, 1984; Mebert, 1991). Further, parents' perceptions, whether "accurate" or not, may ultimately shape the presentation of infant temperament and parent-child relationships (Pauli-Pott, Mertesacker, Blade, Haverkock, & Beckman, 2003). Studies have associated "difficult" infant temperament with parental qualities, most frequently of mothers, measured before the birth of the infant. For example, such characteristics as maternal depression, anxiety, and personality styles have been related to "difficult" infant temperament ratings (Mebert, 1991; Mednick et al., 1996; Vaughn et al., 1987). In addition, some research has noted the impact of socioeconomic status on temperament reports, with mothers of lower SES often rating their children as more "difficult" (Greenbaum, Auerbach, & Guttman, 1996; Vaughn et al., 1987).

Examining parental characteristics that may affect the way parents perceive and possibly interact with their infants is important. Parental depression, which has been associated with "difficult" infant temperament ratings (e.g., Vaughn et al., 1987), may stem, in part, from difficulties within the marriage. Research has linked marital quality,

and marital conflict in particular, with partner depression and well-being (Cummings & Davies, 1994). Moreover, marital conflict and parental depression, both separately and in combination, have been associated with the development of negative future child outcomes including internalizing behaviors in girls and externalizing behaviors in boys (e.g., Davies & Cummings, 1994).

Despite this relationship between marital quality and depression, studies linking parental qualities to “difficult” infant temperament rarely focus on marital quality as a potential influence on parent’s perceptions of their infant. The few studies that have included marital quality, most often conducted with white, middle-class families, frequently examine the effects of a “difficult” infant on the marriage and family functioning, rather than the influence of the marriage on parents’ perception of the infant’s temperament (e.g., Sheeber & Johnson, 1992). In addition, parental well-being may mediate this relationship between prenatal marital quality and infant temperament ratings as both marital quality and infant temperament have been linked to parental depression.

The following literature review is organized into four sections. First, definitions and descriptions of infant temperament research will be examined. Second, I discuss the role of parental depression as it relates to infant temperament and may serve as a potential mediating variable linking aspects of marriage to infant temperament. Third, I explore the bi-directional influences between marital quality and infant temperament. Finally, the discussion closes with attention to the role that social context may play in shaping family processes, with specific attention to issues of social class and family structure (i.e., dual-earner families).

CHAPTER 2

LITERATURE REVIEW

Definitions of Infant Temperament

Much research has focused on identifying various early characteristics of children that may predict their future personality, behavior, and interactions with others. At the center of the literature on infant temperament lies the classic nature-nurture debate with a critical question being: Do biological differences of children, namely temperament, shape their environment or does their environment (e.g., parents' characteristics, family structure, social class) shape temperament? In fact, early research on infant temperament by Thomas and Chess (1977) arose as a response to the 1950s assertion that behavior problems in children resulted from poor parenting, specifically poor mothering (Lamb, Hwang, Ketterlinus, & Fracasso, 1999). The temperament literature began to suggest that perhaps the problem lay not with the parent, or parenting styles, but with the child. This debate between the relative importance of child characteristics versus the environment emerges throughout discussions of infant temperament, from disagreement over its definition and components to questions of its influence on the development of behavior problems.

Researchers define temperament in a variety of ways; some giving more emphasis to the biological contribution, others to environmental influences (Pedlow, Sanson, Prior, & Oberklaid, 1993). Three components underlie the majority of descriptions of infant temperament: its biological roots, its relative stability, and its effect on development (Thompson, 1999). Rothbart (1986) defines temperament as “constitutionally based individual differences in reactivity and self-regulation, with ‘constitutional’ referring to

the relatively enduring biological makeup of the individual, influenced over time by heredity, maturation, and experience” (p. 356). Further, emphasizing the biological dimension, Buss and Plomin (1984) conceive of temperament as stable, heritable predispositions to behavior. In contrast, Lerner and Lerner (1983) lend greater support to environmental influences in describing temperament, emphasizing the importance of reciprocal interactions to the developing child. Kagan (2003), through his longitudinal investigations linking high- and low-reactive infants with future shyness and sociability, makes a strong case for the inherited, neurological foundation of temperament. His research supports the involvement of the amygdala, specifically the degree of excitability present in the distribution of neurotransmitters, to the manifestation of high and low infant reactivity. In fact, Kagan (2003) argues infant high-reactivity, which has been linked to future shyness and timidity, may stem from inhibited GABA-functioning. Still, Kagan and his colleagues (Kagan, Snidman, & Arcus, 1998) note the role of the environment in the stability and “final form” of child temperament. Therefore, the very definition of temperament remains contested as to the relative contributions of the child’s biology and environment.

Dimensions of Temperament

One obstacle to a unified definition of infant temperament is that researchers disagree over the various dimensions and the construct itself. Thomas and Chess (1977) in their pioneering work on infant temperament in the New York Longitudinal Study, describe temperament in terms of behavior style, as the “how” of behavior, rather than motivation (“why”) or content (“what”) of behavior. They described temperament in terms of nine characteristics: the infant’s activity level (motor abilities), rhythmicity

(regular sleep/eating schedules), approach or withdrawal, adaptability, intensity of reaction, threshold of responsiveness, quality of mood, distractibility, and attention span and persistence (Lerner, 1997). Rothbart (1981) in her attempt to assess Thomas and Chess' dimensions, reduced infant temperament to six measurable components, which included activity level, smiling and laughter, fear (distress and latency of approach), distress to limitations (frustration), duration of orientating, and soothability. Buss and Plomin (1984) describe temperament in terms of three characteristics: activity level, emotionality, and sociability. Researchers also define temperament in terms of positive and negative emotionality (e.g., Rothbart, 1986). These various temperament components have often been combined to create particular characterizations, or styles, of infant temperament.

The Concept of a "Difficult" Temperament

Thomas and Chess (1977), through their New York Longitudinal Study (NYLS), identified four basic temperament styles: the "easy" child, the "slow-to-warm-up" child, the "average" child, and the "difficult" child (Lamb et al., 1999). Infants and children with "difficult" temperaments have received the most attention from researchers (e.g., Sanson et al., 1991; Shaw et al., 1994). Infants classified with "difficult" temperaments typically exhibit such characteristics as irregular sleep and eating patterns, high levels of distress, problems adjusting to new situations, and negative mood (Lerner, 1997). Such qualities of the infant have been related to future behavioral difficulties, including internalizing and externalizing behavior problems in children (Shaw et al., 1994) and problems interacting with teachers (Lerner, 1997). Despite this literature linking "difficult" infant temperament with future negative outcomes, a better understanding of

this relationship involves investigating the influence of other factors, including the child's environment, on the development of these difficulties.

The Concept of "Goodness-of-Fit"

Acknowledging the importance of the environment to behavioral development, Thomas and Chess (1977) further noted the influence of the "fit" between the child's temperament, especially in cases of "difficult" temperaments, and their environment (Lamb et al., 1999). Similarly, Kagan, Snidman, and Arcus (1998), in their longitudinal research with high- and low-reactive 4 month-old infants, noted the importance of environmental "fit" to future temperamental presentation 4 years later. While one-fourth of high-reactive infants presented as shy and inhibited and one-fourth of low-reactive infants presented as socialable and uninhibited at 4 ½ years old as expected, the majority of both high and low-reactive infants appeared within the normal range for social behavior for their age. As a result of this finding, Kagan, Snidman, and Arcus (1998) conclude that parents' who are "highly" or overly responsive to their infant's high reactivity may facilitate their child's future degree of inhibition. Infants and children with "difficult" temperaments raised in supportive environmental contexts in which parents' modify their own behaviors and expectations in response to their child's temperament may avoid future behavior problems (Lamb et al., 1999). However, "difficult" children in less supportive contexts, especially in combination with other risk factors such as marital discord, low SES, and parental depression face increased risk for future developmental difficulties (Sanson et al., 1991; Shaw et al., 1994). Sanson et al. (1991) noted that mothers' perceptions of their infants as "difficult" strongly predicted preschool behavior problems. In combination with other risk factors, including low SES

and premature birth, difficult temperament exerted a much greater influence on childhood behavior problems.

Extending this “Goodness-of-Fit” to Importance of Ecological Perspective

This emphasis on context and “fit” of the environment to individual temperament highlights the importance of adopting an ecological perspective to understanding child development. Bronfenbrenner and Morris (1998) challenge researchers to focus on the interrelationships among different aspects of the social environment, including characteristics of the marital relationship, family structure, employment status, and social class, on the developing child. More specifically, contexts involving the potential for high stress (e.g., low income, dual-earner) may influence parent functioning which, in turn, may affect child behavior. The following section will explore parental well-being and marital quality as contexts for the development of infant temperament and close with attention to the broader context of class and family structure that may further impact child well-being.

Parent Reports of Infant Temperament

Measures of infant temperament frequently rely on parents to provide an accurate profile of their infant’s temperament (Rothbart, 1981). Several researchers, however, have questioned this standard method of assessing temperament, arguing that that such reports provide more information about parental qualities, or the infant’s environment, rather than qualities of the infant themselves (e.g., Vaughn et al., 1987). In an attempt to address this question of whether parent ratings provide an accurate reflection of infant temperament, Bates and Bayles (1984), in a longitudinal study with middle-class families, concluded that mother-reports consist of both objective (agreement with

observer) and subjective components (maternal personality). The objective component of these ratings accurately captures the individual, biological differences depicted in classic definitions of temperament. However, the subjective component highlights the influence of the infant's environment, including characteristics of the rater, on reports of infant temperament (Bates & Bayles, 1984; Mebert, 1991). Greenbaum, Auerbach, and Guttman, (1989) further describe this division of parent-reports as "determined in part by the infant's characteristics, and by parent needs and motivations" (p. 87). They suggested that these parental characteristics that may influence infant temperament reports include sex of the parent and their social class. In a longitudinal investigation with middle-class couples from pregnancy to 3.5 months postpartum, Mebert (1991) found that parents' prenatal depression and anxiety scores, as well as their expectations about their infant's temperament, predicted their postnatal ratings of infant temperament.

Parental Agreement

Another methodological concern with parent-report assessments is that many studies note only low to moderate agreement between parents regarding their infant's temperament (e.g., Mebert, 1989). Some investigations have concluded that regular contact with the infant (Mebert, 1989) or parental characteristics (Vaughn et al., 1987) explain this discrepancy. Other researchers suggest that parental agreement, or lack thereof, in reports of infant temperament reflect the degree of organization within the home, with more discordant reports reflecting greater family disorganization (Simons, McCluskey, & Mullet, 1985).

Prenatal Well-Being and Infant Temperament

The most well-documented links between parental qualities and perceptions of infant temperament involve parent psychological well-being and “difficult” infant temperament (Vaughn et al., 1987; Mebert, 1991). Specifically, postnatal and concurrent measures of parental depression and anxiety have been related to infant temperament reports (Dudley, Roy, Kelk, & Bernard; 2000; Edhborg, Seimyr, Lundh, Widstrom, 2000; McMahon, Barnett, Kowelenko, Tennant, & Donn, 2001; Mednick et al., 1996). Maternal postpartum depression, in particular, has frequently been associated with “difficult” infant temperament reports (Edhborg et al., 2000; McMahon et al., 2001; Whiffen, 1990). Interestingly, although Whiffen (1990), in her sample of 120 affluent first-time mothers and their infants, found correlations between early postpartum depression, measured by the Beck Depression Inventory (BDI), and “difficult” infant temperament 2 years later, this association was explained by the stability of depression between the two time points. As a result, Whiffen (1990) concluded that the stability of depression represented the actual link to infant temperament with mothers being more likely to rate their infants at Time 2 as difficult because they continued to experience depression. The majority of these studies, again, have focused on this relationship only for mothers. Some studies, however, have documented a cross-over effect of maternal depression to father’s perception of their infants as more difficult (Edhborg et al., 2000; Whiffen, 1990). Unfortunately, neither of these studies assessed paternal level of depression as a potential link to perceived infant temperament.

Longitudinal studies connecting parents’, most often mothers’, prenatal depression and anxiety levels with postnatal ratings of their infant’s temperament provide

particularly strong evidence for this subjective aspect of parent reports and perceptions of infant temperament. For example, Vaughn, Taraldson, Crichton, and Egeland (1981) found associations between maternal depression and anxiety measured before the infant's birth and subsequent ratings of the infant as difficult. Responding to criticism that this first longitudinal study consisted of a limited sample of lower class and "emotional-disturbed" mothers (Bates & Bayles, 1984), Vaughn et al. (1987) replicated the study with a more representative sample and found similar results. Again, infant temperament ratings were associated with psychological characteristics of the mother measured before the infant's birth.

Historically, few researchers have looked at the relationship between parental well-being and infant temperament for fathers; however, several recent investigations have begun to extend this line of research. Parental anxiety and depression have been linked to "difficult" infant temperament for both mothers and fathers (Mebert, 1991). Diener, Goldstein, and Mangelsdorf (1995), in a study of 70 first-time middle-class couples, found that happier mothers and fathers at a prenatal interview both expected to have infants who would laugh and smile more and subsequently perceived their infants as smiling and laughing more at 3 months. The best predictor of postnatal infant temperament ratings was their prenatal expectation of their infant's temperament, which again was also related to happiness. Yet, direct measures of depression and anxiety in this study were not related to infant temperament ratings. They noted that an overall elevated mood present in their sample might explain this lack of association between direct measures of well-being and infant temperament, suggesting the possibility of a threshold level of depression and anxiety for the emergence of this relationship.

Depression and marital quality

Parental depression, which may skew perceptions of infant temperament, may result, in part, from difficulties within the marriage. Research has established a link between marital quality and individual well-being (Cummings & Davies, 1994). In particular, conflict within the marriage has frequently been associated with increased spousal depression and has even been related to suppressed functioning of the immune system (Gottman & Notarius, 2000). Further, marital conflict has been cited as the most common reason couples seek therapy (Bradbury & Fincham, 1990) and the most frequent “life event” preceding the onset of depression (Paykel, Myers, Dienelt, Klerman, Lindenthal, & Pepper, 1969). In addition, in comparison with non-depressed couples, Gotlib and Whiffen (1989) found that depressed couples reported lower marital satisfaction.

Further evidence for this relationship between marital conflict and depression stems from literature on the transition to parenthood (Gottman & Notarius, 2000). Research has noted an inverse relationship between depression and marital quality, with couples facing an increased risk of depression and declining marital satisfaction, following the birth of a baby (Gottman & Notarius, 2000; Hock, Schirtzinger, Lutz, & Widaman, 1995). In fact, studies have identified marital distress as an important predictor of postnatal depression in women (Hock et al, 1995; Whiffen, 1988). Although the majority of the investigations on postnatal depression have focused primarily on new mothers, studies including fathers have found similar results. Marital dissatisfaction and reduced perceived partner support has been associated with postnatal depression in new fathers (Dudley, Roy, Kelk, & Bernard, 2001).

Marital quality and parental well-being have been associated both separately and, in combination, with the development of negative child outcomes including internalizing behaviors in girls and externalizing behaviors in boys (Crockenberg & Forgays, 1996; Davies & Cummings, 1994; Ingoldsby, Shaw, Owens, & Winslow, 1999). Although some research has found that the combination of marital conflict and parental depression better predicts negative child outcomes than either factor alone (e.g., Shaw & Emery, 1988), others have asserted that marital conflict is the stronger predictor of child difficulties (e.g., Rutter & Quinton, 1984). Research has further linked marital conflict with such difficulties as peer relationship and academic problems (Davies & Cummings, 1994). In fact, with increased family stress, including lower SES, marital conflict acts as a particularly powerful risk factor (Jouriles, Bourg, & Farris, 1991).

Marital Quality and Perceptions of Infant Temperament

Relatively few studies have directly examined the relationship between marital quality and perceptions of infant temperament (Sheeber & Johnson, 1992; Leve, Scaramella, & Fagot, 2001), even fewer have explored this relationship with longitudinal data. In addition, the little research available linking parents' marital relationship to infant temperament primarily focuses on the effect of a "difficult" infant on the marriage, rather than the possibility that the marriage may affect the parent's perception of their infant's temperament. For example, in a cross-sectional study with 77 middle-class mothers and their 3-4 year-old children, Sheeber and Johnson (1992) found a positive relationship between children's "difficult" temperament and maternal ratings of marital dissatisfaction. Similarly, in an additional correlational study, Leve, Scaramella, and Fagot (2001) found that middle-class parents who report their infants as more distressed

experience less pleasure in parenting. For fathers, though not for mothers, marital satisfaction mediated this relationship between infant temperament and pleasure in parenting, suggesting that for fathers, more distressed infants "disrupt" the marriage indirectly decreasing parenting satisfaction (Leve, Scaramella, & Fagot, 2001).

However, Katz and Gottman (1993), in a longitudinal study with 4 year-old children and their parents, did not find a relationship between difficult child temperament and their parent's current and future marital satisfaction measured four years later.

Longitudinal studies on the transition to parenthood, which include both prenatal assessments of the marital relationship and postnatal measures of infant temperament, provide particularly strong support for a connection between marital quality and perceptions of infant temperament. The transition to parenthood comprises an especially important period to examine this possible relationship as the literature frequently focuses on the impact of a new infant on the couple's marital satisfaction. Further, research has consistently documented a general decline in marital quality, most notably for women, following the birth of a baby (Belsky & Rovine, 1990; Gottman & Notarius, 2000; Hock, 1995; Wallace & Gotlib, 1990). However, such decline does not occur for all couples (Belsky & Rovine, 1990; Gottman & Notarius, 2000; Shapiro, Gottman, & Carrere, 2000). Some marriages may actually improve during this period of adjustment (Belsky & Rovine, 1990). The strongest predictors of marital change during this transition consisted of factors present before the infant's birth. In fact, prenatal marital satisfaction for both husbands and wives best predicted their level of marital satisfaction following the birth of their first child (Belsky & Rovine, 1990; Wallace & Gotlib, 1990). As further noted by

Belsky, Spanier, and Rovine (1983), a new infant does not cause marital distress if it was not present before nor does it salvage a previously distressed marriage.

The majority of transition to parenthood investigations that have examined the relationship between marital quality and infant temperament have again focused primarily on the strain of a "difficult" infant on the marriage (Belsky & Rovine, 1990; Wallace & Gotlib, 1990). These studies have also produced some inconsistent results. Wallace and Gotlib (1990), in their research with "well-educated" couples, did not find that infant temperament characteristics predicted postnatal marital adjustment. However, Belsky & Rovine (1990), in their longitudinal study with middle- and working-class families, found that infant temperament significantly distinguished individual patterns of marital change. For women, infant unpredictability at 3 months postpartum strongly predicted which marriages improved or declined. Further, women who experienced declining love and increased marital conflict following the birth of a baby rated their infant as more irregular in sleeping and eating schedules than women whose marriages improved. Given that individual patterns of marital change are largely predicted by factors present before the infant's birth, these ratings of greater "difficultness" in infants of mothers experiencing greater marital decline likely relates to more than just the impact of a difficult infant on the marriage. In fact, although the goal of their study involved predicting individual patterns of marital change, Belsky and Rovine (1990) suggested "the possibility that even as early as three months postpartum, the infant's unpredictable nature is a result of emerging problems in the marriage" (p. 18). The question still remains, however, as to whether a previously distressed marriage predicts parents' future perceptions of their infant.

Sex of the Infant

Parental perceptions of child temperament may also vary by the sex of the infant. Several studies have documented sex differences in infant difficultness ratings, more often with mothers rating their infant sons more negatively than their infant daughters (e.g., Mednick, Hocesvar, Baker, & Schulsinger, 1996). For example, Mednick and colleagues (1996) found a stronger association between maternal anxiety and “difficultness” in male infants than female infants. In addition, Crockenberg and Smith (1982) found that mothers respond more to irritable female infants than to male infants. The authors further suggested that, as a result, male infants may face particular risk for the development of future behavior problems.

The Social Context of New Parenthood

Families cope with the transition to parenthood in a variety of different settings that provide more or less support. Specifically, social class may have important implications for family functioning. Several studies have indicated that socioeconomic status may affect parents’ ratings of their infant’s temperament (Greenbaum, Auerbach, & Guttman, 1989; Vaughn et al., 1987). For example, Vaughn et al. (1987) found that lower SES mothers rated their infants as more difficult. New parents of lower SES levels may experience elevated levels of stress in becoming new parents due to limited resources and this stress may negatively affect their perception of their child. Not all studies, however, have documented such a link between SES level and temperament ratings (Mednick et al., 1996). The majority of research on perceptions of infant temperament has been conducted with middle-class parents. In addition, Greenbaum, Aurbach, and Guttman (1989) in their study with Israeli couples found that lower-class

parents rated their children as less soothable and more “disturbing” than middle-class parents. The authors concluded that “lower class parents with first-born children will see their infants as relatively more difficult than middle-class parents if they feel more stress and less social support than middle-class parents.” Additional research has suggested that dual-earner couples may be at a greater risk for increased stress and marital discord (Hochschild, 1989). Thus, working-class, dual-earner families may be particularly at risk for marital conflict and depression, which may ultimately affect their perceptions of infant temperament.

The Present Study

The current study examined the association between dual-earner, working-class parents’ level of marital quality measured before the birth of their first child as it relates to “soothability” and “smiling and laughter” ratings of their 12-month old infant. Marital love and conflict assessed prior to the infant’s birth were used because research examining patterns of marital change following the birth of an infant found prebirth measures of marital satisfaction strongly predictive of postnatal marital quality (Belsky & Rovine, 1990). In addition, while a reciprocal relationship between the development of infant temperament and marital love and conflict likely exists, for this project, I focused on only one aspect of this relationship, parent’s prenatal marital love and conflict levels as predictors of their infant temperament scores.

Research has also linked marital satisfaction to individual well-being, and has specifically documented a negative relationship between marital quality and depression following the birth of a baby (Hock et al. 1995). Further, parental depression has frequently been associated with “difficult” infant temperament ratings (e. g., Mebert,

1991). As a result, I looked at parent's prenatal level of depression at as a possible mediating variable between parents' reports of marital love and conflict in the wife's third trimester of pregnancy and their ratings of their infant's temperament at 12 months old.

Hypotheses & Relevant Analyses

Figure 1 presents the direct and indirect relationships tested in this study. My main questions, and corresponding hypotheses, were the following:

Question #1:

How do mothers' and fathers' prenatal marital love and conflict scores relate to their ratings of their 12-month old infants smiling & laughter and soothability scores?

Hypothesis #1:

I hypothesized that mothers and fathers with higher reported prenatal marital love measured in the wife's third trimester of pregnancy would rate their infants more positively on temperament dimensions of smiling and laughter and soothability than parents with less prenatal marital love. Further, I predicted that mothers and fathers with lower reported prenatal marital conflict would rate their infants more positively on temperament dimensions of smiling and laughter and soothability than parents with greater reported marital conflict.

Research has noted that the presence of marital conflict may not solely account for negative child outcomes. Rather, factors such as conflict resolution strategies and children's emotional processing of the conflict may primarily contribute (Crockenberg & Forgays, 1996). As a result, I also looked at the interaction of marital love and conflict scores as predictors of infant temperament to examine the relationship between marital

conflict in the context of low and high marital love and positive emotionality temperament ratings.

Question #2A:

Is the sex of the infant directly related to infant temperament?

Hypothesis #2A:

As several studies have documented sex differences in infant difficulty ratings, parent's perceptions of temperament may relate to the sex of the infant (e.g., Mednick et al., 1996). I hypothesized that mothers would rate their infant daughters more positively than their infant sons.

Question #2B:

Does the sex of the infant moderate the relationship between marital quality and infant temperament?

Hypothesis #2B:

I hypothesized that the relationship between marital love and conflict and infant temperament would vary by sex. This question is exploratory in nature. However, given previous research linking male infants to increased "difficulty" ratings (e.g., Mednick et al., 1996), I predicted that in the context of high and low marital love and conflict, parents' ratings of infant temperament would vary by sex. For example, I expected that parents with higher reported love and lower reported prenatal marital conflict would rate their male infants as higher in positive emotionality than parents with lower reported love and higher reported conflict. In addition, I hypothesized that parents with higher prenatal marital love would rate female infants as higher in smiling and laughter and soothability than male infants.

Question #3:

How does parental depression mediate the relationship between prenatal marital love and conflict and infant temperament at 12 months?

Hypothesis #3:

I hypothesized that prenatal parental well-being would mediate the relationship between marital love and conflict and infant temperament, with parents with higher reported marital quality and lower depression at Time 1 rating their infant more positively at Time 2.

CHAPTER 3

METHOD

Sample and Procedures

The data for these analyses were gathered through the Work and Family Transitions Project, a longitudinal study on the transition to parenthood in dual-earner families conducted at the University of Massachusetts Amherst. In this larger study, 150 dual-earner couples participated in five interviews over a one year period, which included a third trimester interview, a one-month postpartum interview, an interview within two weeks of the mothers' return to work, a six-month postpartum telephone interview, and a one-year postpartum interview. All interviews, excluding the six-month postpartum interview which was a mailed survey, were conducted in-person within the couple's home. Husbands and wives were interviewed separately by trained interviewers.

Participants were recruited through prenatal education classes in Western Massachusetts and included married or cohabiting heterosexual couples. Selected couples met the following four criteria: 1.) both partners were expecting their first child 2.) both partners were employed full-time (35 hours or more per week) before the birth of the baby 3.) mothers planned to return to work within six months following the birth of the baby 4.) both partners were "working-class" (educational attainment of an Associate's Degree or less).

My masters will focus on data obtained from the prenatal and one-year postpartum interviews. These interviews will be referred to "Time 1" and "Time 2" in this study. For the current investigation, 153 couples completed standardized forms that assess marital satisfaction and depression at Time 1. At Time 2, 135 wives and 134

husbands completed a structured temperament rating of their 12-month-old infant. Hypothesized direct and indirect relationships between these variables reported by wives and husbands are presented in Figure 1.

Sample

The age of the participants in this study ranged from 17.7 to 40.8 for wives and 18.6 to 41.3 for husbands. Wives' average age at the prenatal interview was 27.0 years and husbands' average age was 28.9 years. Nearly eighty percent (77.8) of the couples were married, and the average length of marriage was 3.0 years. The remaining 22.2 % of couples were cohabitating. A high percentage of the participants were White (94.8% of women, 90.2% of men).

Participants reported a broad range in educational attainment levels. The highest degree held by 22.2% of women and 32.7% of men was a high school diploma or GED. However, many of the participants (50.3% of women and 52.3% of men) received some additional training past high school (e.g., EMT certification, truck driving). In addition, 22.2% of women and 15.0% of men had earned a one- or two-year Associate's Degree.

Individually reported income ranged from \$2,000 to \$75,000 annually for men and from \$4,680 to \$70,000 for women. Median salaries were \$30,000 and \$21,120 for men and women respectively, and the median family income was \$53,000. Although several families' total incomes appear relatively high, these families higher reported finances often worked multiple jobs or increased hours to earn extra income. Men worked an average of 47.7 hours per week at the prenatal interview and an average of 46.7 hours at the final postnatal interview. Mothers' weekly hours averaged 40.5 hours per week at the first interview and 34.5 hours at the 12-month postpartum interview.

Measures

The Marital Relationship

Prenatal perceptions of the marital relationship were assessed using two of four subscales from the 25-item Personal Relationship Scale developed by Braiker and Kelly (1979). The 5 items of the Conflict-Negativity subscale address negative aspects of the interpersonal relationship by indicating the amount of conflict experienced by the respondent. The 10 items of the Love subscale address the respondent's feelings of closeness or belonging toward their spouses. Participants responded to questions such as "How often do you and your partner argue with each other?" (conflict-negativity) and "To what extent do you have a sense of 'belonging' with your partner?" (love) on a 9-point Likert scale ranging from "not at all" to "very much". Scale reliability alpha for the conflict-negativity items for men and women, respectively, was .53 and .64. For the love items, the alpha coefficient for men and women, respectively, was .80 and .71.

Infant Temperament

Infant temperament was assessed using Mary Rothbart's (1978) 94-item Infant Behavior Questionnaire (IBQ), which instructs parents to rate the occurrence of particular behaviors of their infant within the past week. This questionnaire contains six subscales that evaluate 1.) activity level, 2.) smiling and laughter, 3.) distress and latency to approach sudden or novel stimuli, 4.) distress to limitations, 5.) soothability, and 6.) duration of orienting. For the purposes of this investigation, infant positive emotionality, which includes two of these six subscales, the 14-item smiling and laughter subscale and 11-item soothability subscale, will be utilized. Participants responded to questions such as "When placed on his/her back, how often did the baby smile or laugh?" (smiling and

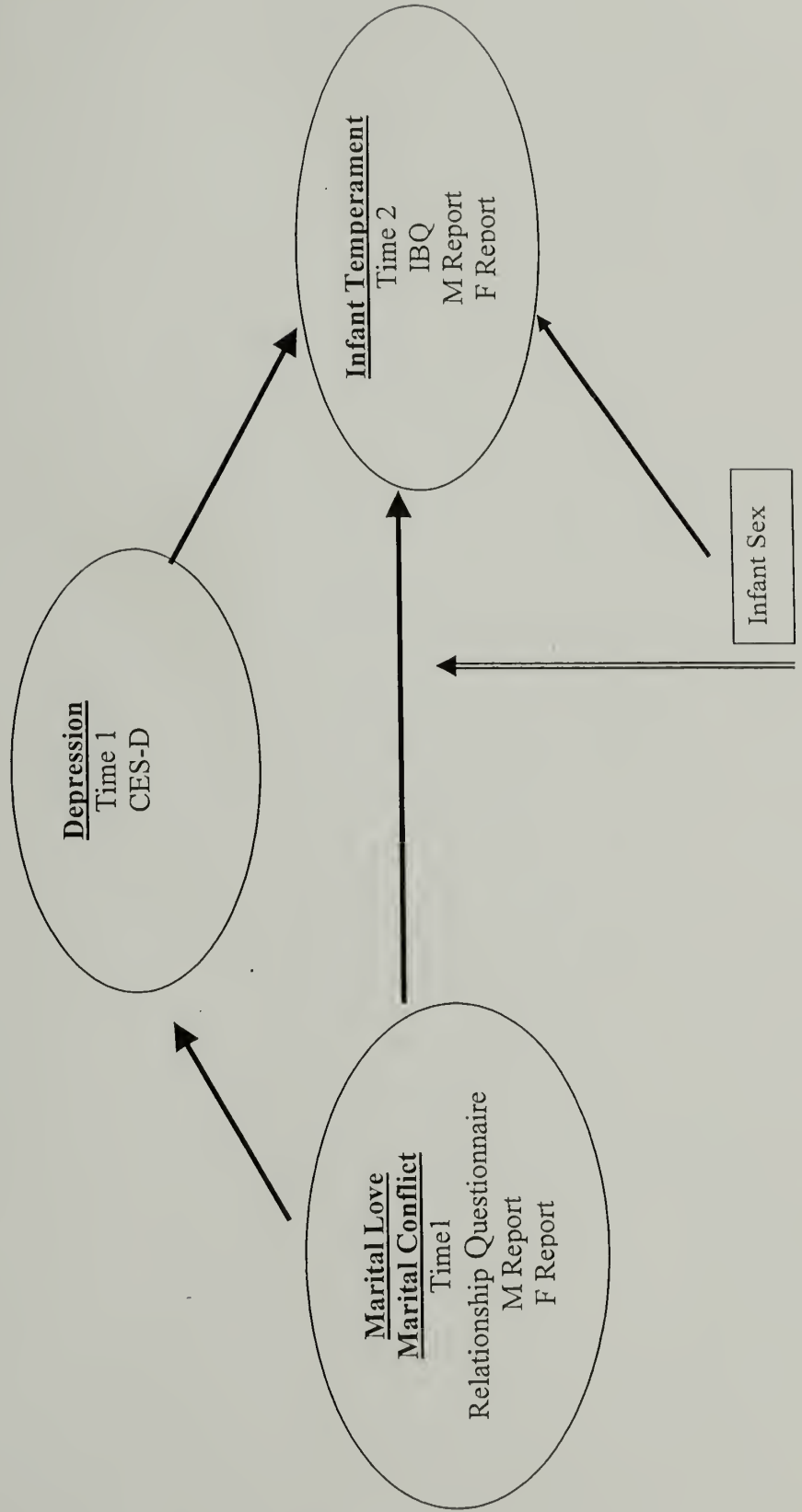
laughter) and “In the last week, how often did the method soothe the baby: rocking?” on a 7-point Likert scale from “never” to “always” within the past week. Scale reliability alpha for the smiling and laughter items for men and women, respectively, was .79 and .81. For the soothability items, the alpha coefficient for men and women, respectively, was .78 and .76.

Parental Depression

Parental depression scores were obtained through the 20-item Center for Epidemiological Studies Depression Scale (CES-D) (Radloff, 1977). This measure addresses respondents’ current depressive symptoms on a 4-point Likert scale from “rarely” to “most of the time” within the past week. Sample items include: “I felt hopeful about the future,” and “I felt that people disliked me.” Scale reliability alpha for men and women, respectively, was .80 and .72.

Figure 1

Proposed Relationship between Prenatal Marital Love and Conflict and Depression with 12-Month Infant Temperament Ratings with Infant Sex as a Potential Moderator



CHAPTER 4

RESULTS

Before addressing the major research questions, descriptive statistics on the independent and dependent variables were calculated for husbands and wives. Means and standard deviations are presented in Table 1. Overall, both husbands and wives reported relatively high mean levels of marital love and low mean levels of marital conflict before the birth of their first child. Although not statistically significant, a trend indicated that wives tended to rate their marital love at Time 1 higher than husbands ($t = -1.77, p = .077$). Mean differences examined between husbands' and wives' prenatal marital conflict scores indicated that husbands reported significantly higher levels of conflict than wives ($t = -2.27, p = .024$). However, wives reported significantly greater mean depression scores at Time 1 than husbands ($t = -7.25, p = .000$).

At Time 2, husbands' and wives' rated their 12-month-old infant's temperament in terms of positive emotionality. Parents' overall mean ratings of their infant's degree of smiling and laughter did not significantly differ. However, husbands' and wives' reports of their infant's mean level of soothability at 12 months significantly varied, with wives' rating their infant as more easily soothed ($t = -2.35, p = .020$).

To examine agreement in husbands' and wives' ratings of temperament, bivariate correlations between husbands' and wives' reports of their 12-month-old infant's temperament are presented in Table 2. Couples' ratings of their infant's level of smiling and laughter were significantly positively related ($r = .19, p < .05$). For example, wives' reports of greater infant smiling and laughter were modestly associated with higher

husband-reported infant smiling and laughter. However, husbands' and wives' reports of infant soothability were unrelated.

All subsequent analyses related to the main research questions were performed separately for husbands and wives.

Past research has identified a number of demographic characteristics that may explain differences in ratings of infant temperament (e.g., Diener, Goldstein, and Mangelsdorf, 1995). Thus, initial correlations and univariate analyses of variance were performed to identify alternative predictors of positive emotionality temperament ratings. These potential predictors included whether the pregnancy was planned, parent age, educational status, income, as well as total work hours. Of these variables, only husband total work hours was significantly correlated with their ratings of infant soothability ($r = -.19, p = .029$). As a result, this variable was controlled for in subsequent hierarchical regressions. In addition, due to the skewed nature of the total work hours distribution, this variable was transformed into a dummy-coded full-time and part-time dichotomous variable for husbands and wives. For these analyses, 35 work hours or more per week were considered full-time.

Turning to the first research question, how do husbands' and wives' prenatal reports of marital love and conflict at Time 1 (prebirth) relate to their Time 2 ratings of their 12-month old infant's smiling & laughter and soothability scores?

Correlational analyses presented in Table 3 between Time 1 marital scores and Time 2 infant temperament ratings yielded several significant findings. For wives, higher Time 1 marital love was significantly related to higher Time 2 positive emotionality temperament ratings (Smiling & Laughter: $r = .23, p = .007$; Soothability: $r = .28, p = .001$).

Further, wives' with higher marital conflict scores reported less infant smiling and laughter ($r=-.21, p=.015$). For husbands, higher Time 1 marital love was also significantly related to higher Time 2 smiling and laughter and soothability ratings of their 12-month-old infant (Smiling & Laughter: $r=.25, p=.004$; Soothability: $r=.20, p=.02$). Although no significant correlations were found between husbands' Time 1 marital conflict and Time 2 infant temperament ratings, a trend indicated that higher husband-reported prenatal marital conflict was related to lower ratings of infant smiling and laughter ($r=.15, p=.09$). For both husbands and wives, prenatal marital conflict was unrelated to their infant soothability ratings.

Following these initial correlations, hierarchical regression analyses were conducted with husbands' and wives' Time 1 marital love and conflict scores predicting Time 2 infant smiling and laughter and soothability ratings, controlling for Time 1 work hours. The interaction between husbands' and wives' reported prenatal marital love and conflict was also examined in the model. These regressions are presented in Tables 4, 5, 6, and 7.

Marital Predictors of Infant Smiling and Laughter

Table 4 presents the hierarchical regression analysis of wives' Time 1 marital variables predicting their Time 2 infant smiling and laughter temperament reports, controlling for work hours. For wives, Time 1 marital love significantly predicted their Time 2 infant smiling and laughter temperament ratings ($b = .24, SE = .14, t = 2.05, p = .042$). Time 1 reports of marital conflict were unrelated to ratings of their infant's smiling and laughter. In addition, the interaction between marital love and conflict as a predictor of infant smiling and laughter was not significant for wives.

Husbands' Time 1 marital love reports also significantly predicted Time 2 infant temperament measures as presented in Table 5. Husbands' Time 2 infant smiling and laughter ratings were significantly predicted by their Time 1 marital love reports ($b = .22$, $SE = .08$, $t = 2.66$, $p = .009$). For husbands, no significant relationship was found between their prenatal marital conflict score and their rating of their infant's smiling and laughter. Moreover, the interaction variable of Time 1 marital love and conflict score was not a significant predictor of Time 2 infant smiling and laughter for husbands.

Marital Predictors of Infant Soothability

Table 6 presents the hierarchical regression analysis of wives' Time 1 marital variables on their Time 2 infant soothability temperament reports, controlling for work hours. Wives' reported infant soothability ratings were predicted by Time 1 wife marital love scores, with every unit increase of wife marital love predicting increases in their reports of their infant's soothability at 12 months ($b = .51$, $SE = .14$, $t = 3.69$, $p = .000$). Wives' prenatal reports of marital conflict were unrelated to ratings of their infant's soothability at 12 months. The interaction variable of Time 1 marital love and conflict was also not a significant predictor of Time 2 infant soothability for wives.

Table 7 presents the hierarchical regression analysis of husbands' Time 1 marital variables on their Time 2 infant soothability temperament reports, controlling for work hours. Husbands' Time 1 marital love significantly predicted their Time 2 ratings of their infant's soothability, with a one unit increase in husbands' marital love predicting an increase in their reports of the soothability of their infant ($b = .28$, $SE = .11$, $t = 2.62$, $p = .010$). No significant relationship was found between prenatal marital conflict score and ratings of infant soothability for husbands. In addition, the interaction between Time 1

marital conflict and love was not a significant predictor of Time 2 infant soothability for husbands.

Focusing on the question, how does the sex of the infant relate to assessments of infant temperament?

Regression analyses were used to examine the relationship between the sex of the infant and parent ratings of the positive emotionality dimensions of infant temperament. For both husband and wife ratings of infant temperament, the sex of the infant was not significantly related to infant smiling and laughter or soothability. (Husband - Smiling & Laughter: $b = .11, p = .36$; Husband – Soothability: $b = .17, p = .25$; Wife – Smiling & Laughter: $b = -.04, p = .70$; Wife – Soothability: $b = .06, p = .67$).

Even though the sex of the infant was not directly linked to parents' temperament ratings, it may be the case that the sex of the infant moderates the relationship between marital quality and infant temperament. As a result, the following research question was addressed: *Does the sex of the infant moderate the relationship between marital quality and infant temperament?*

For both wives and husbands, the interaction between Time 1 marital variables and the sex of the infant was not significant (Husband - Smiling & Laughter: $b = .11, p = .36$; Husband – Soothability: $b = .17, p = .25$; Wife – Smiling & Laughter: $b = -.04, p = .70$; Wife – Soothability: $b = .06, p = .67$). The relationship between Time 1 marital conflict and love scores and Time 2 infant temperament ratings did not depend on infant sex and vice versa.

Question #3:

How does parental depression directly relate to parents' ratings of their 12-month infant's smiling and laughter and soothability? Does depression mediate the relationship between prenatal marital love and conflict and infant temperament at 12 months?

Time 1 Depression as a Predictor of Infant Positive Emotionality Ratings

To explore the role of prenatal depression on parent perceptions of infant temperament, correlations were first conducted between the independent and dependent variables. These correlations for both husbands and wives are presented in Table 3. For husbands, but not for wives, prenatal depression at Time 1 was significantly negatively related to their ratings of their infants smiling and laughter at Time 2 ($r = -.33, p = .000$). Husbands who reported higher levels of depression before the baby was born at Time 1 rated their infants at 12 months as smiling and laughing less than husbands with less reported prenatal depression. Wives' prenatal depression was unrelated to their ratings of their infant's temperament at 12 months. In addition, for both parents, Time 1 depression reports were unrelated to Time 2 infant soothability ratings.

Hierarchical regression analyses were conducted to further examine the direct role of parent prenatal depression on their future ratings of their infant's temperament controlling for work hours. These analyses are presented in Tables 8 and 9. The regression analyses examining the relationship between prenatal depression and parents' ratings of infant soothability are not included in the tables due to lack of significant findings. Looking at infant smiling and laughter ratings, Time 1 prenatal depression was again significant only for husbands' reports of their infant's level of smiling and laughter at 12 months. Husbands who reported greater prenatal depression rated their infant's

amount of smiling and laughter lower than father who reported less prenatal depression ($b = -.73, SE = .17, t = -1.67, p = .000$). Wives' Time 1 depression was unrelated to Time 2 infant smiling and laughter ratings. Infant soothability was unrelated to both husbands' and wives' prenatal depression.

Time 1 Depression as a Mediator of Infant Smiling & Laughter

The role of prenatal depression as a mediator of the relationship between Time 1 marital reports and Time 2 ratings of infant temperament was examined only for husbands given the lack of relationship between Time 1 depression and Time 2 infant temperament ratings for mothers. Husbands' depression at Time 1 predicted only their ratings of their infant's smiling and laughter, not soothability. As a result, only husbands' ratings of infant smiling and laughter were included in this mediational model. In addition, although a trend between husbands' reported marital conflict at Time 1 and their Time 2 smiling and laughter temperament ratings was noted, only husbands' reported marital love was significantly related to infant temperament ratings and was included in this model.

To first examine the possible mediator role of husbands' Time 1 (prenatal) depression between husbands' Time 1 marital love and Time 2 reports of infant smiling and laughter, correlations were conducted between the independent and potential mediating variables. Husbands' Time 1 marital love was significantly negatively related to their Time 1 reports of depression, with husbands with higher levels of prebirth marital love reporting lower levels of depression ($r = -.21, p = .01$).

As a result of the significant negative relationship between husbands' Time 1 marital love and depression as well as the significant roles of both variables as individual

predictors of husband-reported Time 2 infant smiling and laughter, a mediational model was tested. The results of this hierarchical regression analysis are presented in Table 10. For husbands, Time 1 depression significantly mediates the relationship between Time 1 marital love and Time 2 infant smiling and laughter ($b = -.63, SE=.17, p = .000$). When included in the model, Time 1 depression remains a significant predictor of Time 2 smiling and laughter, while the significance of marital love, while still significant, is reduced. As a result, Time 1 depression significantly mediates the relationship, with husbands reporting higher marital love and lower depression before the birth of their infant rating their 12-month old infant higher in smiling and laughter.

Additional Analyses

Although the previous results reported the relationship between wives' and husbands' Time 1 and Time 2 variables separately, additional correlational analyses were conducted to explore the potentially interesting cross-over relationship among spouses' variables. Specifically, these correlations performed between husbands and wives prenatal marital and well-being scores and postnatal infant temperament ratings yielded several significant findings. For husbands, higher prenatal depression was significantly related to wives' ratings of their infant as more soothable ($r = -.19, p = .031$). In addition, although not significant, a trend indicated that increased prenatal depression in wives was related to husbands' ratings of their infants as higher in smiling and laughter ($r = -.15, p = .088$).

CHAPTER 5

DISCUSSION

A primary goal of the current study involved highlighting the central question underlying the nature-nurture debate concerning infant temperament, namely: To what extent can temperamental differences be attributed to heritable, biological aspects of the child that, in turn, influence their environment or to what extent are temperamental characteristics shaped by their environment, reflecting parental qualities and perceptions, family systems, as well as social class? Clearly, the genetic component to temperament described in classic definitions offered by such notable researchers as Rothbart (1986), Buss and Plomin (1984), and Kagan (2003) cannot be discounted nor can the likely bidirectional relationship between the genetic and environmental contributions to temperament be ignored. The current study targeted only one facet of this relationship, the potential contribution of environmental influences to the development of infant and child temperament, specifically focusing on the impact of new parents' marital relationship before the birth of their first child on the future perceptions of their infant's temperament.

Further, the aim of this study was to extend the research on perceptions of infant temperament in several ways. First, this project attempted to look at the influence of features of the infant's environment present before his or her birth on subsequent parental perceptions of temperament from a more positive stance. More specifically, would positive aspects of wives' and husbands' marital relationship and well-being predict viewing more positive qualities in their future infant's temperament? Much of the previous research on perceptions of infant temperament has focused on identifying

potential risk factors, including parental personality styles and psychopathology, to the classification of infants as “difficult” (e.g., Vaughn, 1987). The identification of precursors to infant temperamental “difficultness” is important as several studies have linked “difficult infants” to future child internalizing and externalizing behavior problems – school problems (e.g., Cummings & Davies, 1994). However, the focus of the current study was to identify potential protective influences that might predict more positive perceptions of infant temperament rarely acknowledged in the literature. In addition to identifying such features, this study examined whether positive environmental features would exert their influence in the same manner as more negative environmental influences have demonstrated, just in the opposite direction.

Secondly, this study aimed to extend the research on perceptions of infant temperament beyond individual qualities of the parent to aspects of their marital relationship before the birth of their first child. Research that has looked at the link between marriage and infant temperament generally has examined the strain of a “difficult” infant on the marriage (Belsky & Rovine, 1990; Wallace & Gotlib, 1990). Few studies have looked at the other aspect of this reciprocal relationship, namely the impact of marital qualities on future perceptions of infant temperament. Additionally, the literature has rarely examined the potential positive impact of a marriage characterized by high love on perceptions of infant temperament.

Finally, much of the research on perceptions of infant temperament has focused primarily on the experiences of White, middle-class parents, most often mothers, on their infant. The current study examined the relationship between qualities of the marriage and perceptions of infant temperament with a unique sample of working-class, dual-earner

couples experiencing the transition to parenthood. Working-class, dual-earner couples may face particular challenges not addressed by research with middle-class parents. Research has suggested that dual-earner couples may be at a greater risk for increased stress and marital discord (Hochschild, 1989). Therefore, identifying potential marital features associated with more positive parental views of their infant may be especially important for these families. This study additionally focused on the impact of the marriage on future perceptions of infant temperament for both mothers and fathers.

Parent Agreement

Parent report measures of infant temperament have been described by researchers as consisting of both objective (e.g., agreement with observer) and subjective (e.g., qualities of the parent or environment) components (Bates & Bayles, 1984; Mebert, 1991). An additional methodological concern associated with parent report assessments involves the low to moderate agreement between parents reported by several studies (e.g., Mebert, 1989). Consistent with such findings on parental agreement, the current study found only moderate agreement between parents' reports of their 12-month-old infant's level of smiling and laughter. Husbands' and wives' reports of their infant's degree of soothability were unrelated. This lack of correspondence between husbands' and wives' ratings of their infant's soothability may stem from the amount and characteristics of parent contact with their infant. For example, one possible explanation of mothers' reporting significantly higher levels of mean infant soothability involves that fathers may spend greater time with their 12-month-old in the evening, a time at which the infant may appear less easily soothed.

Marital Love and Conflict as Predictors of Infant Temperament

Longitudinal data were used to address the relationship between wives' and husbands' reports of marital love and conflict before the birth of their first child and their future positive emotionality ratings of their 12-month-old infant. The amount of prenatal marital love reported by each parent appears to impact future ratings of positive infant temperament qualities. For both wives' and husbands' in the current study, the presence of high marital love predicted increased ratings of infant smiling and laughter and soothability. This finding is consistent with Diener, Goldstein, and Mangelsdorf (1995) report in their study of 70 middle-class couples, that positive parental qualities before the birth of their first child were associated with higher expectations and future perceptions of greater smiling and laughter in their infants. While Diener, Goldstein, and Mangelsdorf (1995) did not directly examine the relationship between positive marital qualities and perceptions of infant temperament, their finding linking positive parental characteristics with higher future perceptions of positive temperament features lends support to the possibility that higher prenatal marital love may predict increased future reports of infant smiling and laughter.

The little research linking marital qualities and infant temperament has focused primarily on the impact of infant temperament on disruptions in the marriage. Cross-sectional studies that have examined the relationship between marriage and infant temperament have noted associations between children's "difficult" temperament and ratings of marital dissatisfaction (Sheeber & Johnson, 1992; Scaramella & Fagot, 2001). In the current longitudinal study, levels of prenatal marital conflict did not predict parents' smiling and laughter and soothability ratings of their infant. This finding that

Time 1 marital conflict did not predict positive emotionality temperament ratings may indicate that predictors of positive infant temperament are distinct from predictors of more negative temperamental characteristics. Additionally, examining this relationship from a perspective of identifying protective or “good” predictors may not directly mirror the path of risk factors.

The current study examined the interaction of prenatal marital love and conflict scores as a predictor of positive emotionality infant temperament ratings. More specifically, this interaction variable was included to analyze the relationship between marital love in the context of high and low marital conflict and future infant smiling and soothability ratings and vice versa.

However, this relationship between wives’ and husbands’ level of prenatal marital love and their future positive emotionality temperament ratings of their infant did not depend on their level of prenatal marital conflict and vice versa. The original hypothesis for this potential moderating relationship on perceptions of infant temperament developed from research noting that the presence of marital conflict may not solely account for negative child outcomes (Crockenberg & Forgays, 1996). Therefore, a similar relationship was expected for identifying more positive child outcomes, or features of temperament. It was hypothesized that prenatal marriages characterized by the presence of marital conflict in the context of higher levels of marital love would also predict increased perceptions of infant smiling and laughter and soothability. However, this relationship was not found. This lack of moderation effect raises the possibility that, again, predictors of more positive child outcomes may not be the opposite of predictors

of negative child outcomes. To test this hypothesis, the same relationship would have to be first analyzed with predictions of more “difficult” temperaments

Marital Love and Conflict as Predictors of Infant Temperament

Previous research has noted sex differences in infant temperament ratings (e.g., Mednick, Heccevar, Baker, & Schulsinger, 1996). In the current study, the sex of the infant was not directly or indirectly related to wives’ and husbands’ perceptions of their 12-month-old infant’s smiling and laughter or soothability. Parents appear to rate positive emotionality features of their infant’s temperament similarly for male and female infants and the relationships between marital qualities and infant temperament are also seemingly uninfluenced by the sex of the infant. These results may stem in part from the more positive emphasis of this study of perceptions of infant temperament. This differs from past research, which has primarily focused on reports, most often by mothers, of “difficult” infants, specifically noting that male infants are often perceived as more difficult than female infants, placing them at risk for the development of future emotional and behavioral difficulties (Mednick, Heccevar, Baker, & Schulsinger, 1995). It is possible that this potential infant sex difference exists for negative aspects of temperament, but not for the more positive features as examined in the current study. Recent longitudinal research that has looked at the relationship between the sex of the infant and the positive emotionality dimension of temperament also did not find gender differences in parent-perceived temperament (Pauli-Pott, Mertesacker, Blade, Haverkock, & Beckman, 2003). Furthermore, Pauli-Pott et al.’s (2003) investigation of first-time parents did find associations between the sex of the infant and maternal ratings of negative emotionality, with mothers rating their male infants more negatively than female

infants. These findings lend support to the possibility that positive features of infant temperament may not vary by infant sex.

Depression as a Predictor of Perceptions of Infant Temperament

Parent psychological well-being has been linked to perceptions of infant “difficultness” (Vaughn et al., 1987; Mebert, 1991). The current study found husbands’ level of depression before the birth of their first child as predictive of their rating of their future infant’s degree of smiling and laughter. However, this relationship was not found for wives’ level of depression. This lack of finding for wives’ depression may again indicate that identified predictors of negative dimensions of infant temperament may work differently as predictors of positive temperament. Consistent with this explanation, Diener, Goldstein, and Mangelsdorf (1995), in their study of first-time, middle-class parents, did not find standard measures of depression and anxiety related to expectations and perceptions of infant smiling and laughter. They did find, however, that happier mothers and fathers both expected to have and subsequently rated their infant as smiling and laughing more. Attributing this discrepancy to low levels of depression and anxiety observed in their sample, Diener, Goldstein, and Mangelsdorf (1995) suggested the possibility of a “threshold” level of depression and anxiety to support the relationship. However, the current study’s finding linking husbands’ depression with infant smiling and laughter seems inconsistent with this “threshold” hypothesis. Husbands’ reported a significantly lower overall level of prenatal depression than wives. Yet, husbands’, not wives’, level of prenatal depression predicted their infant’s smiling and laughter ratings. It seems clear that more research is necessary to gain a better understanding of the

relationship between parental mental health and positive infant temperament perceptions. Prenatal parental depression was also unrelated to infant soothability ratings.

Depression as a Mediator between Marital Love and Infant Temperament

The current study hypothesized that husbands' and wives' level of prenatal depression would mediate the relationship between marital qualities and perceptions of infant positive emotionality. More specifically, it was expected that husbands' and wives' with more reported prenatal marital love and less reported prenatal conflict would be more likely to report lower prenatal depression, and, thus, would rate their 12-month infant as higher in positive dimensions of infant temperament. This mediating relationship could only be examined between husbands' prenatal marital love and their future smiling and laughter infant temperament ratings given the lack of relationship between depression and infant temperament for wives. Depression was found to significantly mediate this relationship between husbands' prenatal marital love and perceptions of infant temperament. More specifically, husbands with higher marital love were more likely to report less depression, which was, in turn, linked to more positive assessments of 12-month-old infant smiling and laughing. The finding that marital love diminished in significance, but still remained significant, in the mediated model indicates that depression does, in fact, mediate this relationship for husbands. Other variables may also significantly mediate this relationship. Future research should examine additional potential mediators of this relationship, such as work factors and parent personality features.

Limitations

The findings of this study need to be viewed in the context of its limitations. While previous research has noted the existence of both subjective (parental characteristics) and objective components (agreement with observer) to parental reports of infant temperament (Bates & Bayles, 1984; Mebert, 1991), this study did not include a separate objective assessment of infant temperament. Thus, distinguishing these two components of infant temperament was not possible. In addition, ratings of infant temperament were assessed at only one time point. Noting the development of infant temperament across different time points would be especially interesting. The measurement of depression used in this study serves as an additional potential limitation. A few of the included items to this depression score focus on common symptoms also associated with the third trimester of pregnancy, such as sleeping difficulties and loss of appetite.

Implications and Goals for Future Research

This study extends the research on perceptions of infant temperament with its focus on predictors of positive infant temperament. Most importantly, several of the findings and occasional lack of findings (infant sex), seem to indicate that examining the positive does not necessarily mean just the absence of negative. Research on perceptions of infant temperament, as well as clinical research in general, needs to lend greater focus on developing a better understanding of the distinct relationships between potential “positive” or protective factors to development. The findings from this study indicate that the presence of marital love before an infant’s birth may predict positive perceptions of infant temperament by both new mothers and fathers. Recent research by Pauli-Pott et al. (2003) on the influence of parental perceptions noted that early parental ratings and

expectations of infant temperament may actually shape the emergence of such qualities in the future. In their study, which examined the development of both positive and negative emotionality dimensions, parents early ratings of their infant's temperament were only moderately correlated with objective laboratory temperament dimensions. In contrast to relative instability of objective infant temperament ratings across the first year, parental ratings of infant temperament remained stable and by 12 months both objective and subjective reports of infant temperament coincided. The authors conclude that "the subjective component in parent reports is involved in the process of infant temperament development." (p.45). As a result, identifying factors, including prenatal marital love, that may predict a greater likelihood of parents perceiving, and possibly shaping, positive features of their infant's temperament is important and a key target for enhancing through intervention.

To further examine this possibility that parents' perceptions may shape the development of infant temperament future studies need to analyze infant temperament at multiple time points. Future research should also attempt to identify additional contextual variables that may mediate this potential link between positive marital qualities and infant temperament. Finally, this research adds to the literature through its focus on looking at this relationship between marital characteristics and infant temperament in a unique sample of working-class, dual-earner couples, where identification of positive or protective relationship may be particularly important. Future studies of perceptions of infant temperament should continue to develop an understanding of such unique samples of both mothers and fathers.

APPENDIX A

MEASURES

1. Relationship Questionnaire
2. Center for Epidemiological Depression Scale (CES-D)
3. Infant Behavior Questionnaire (IBQ)

APPENDIX A.1

PERSONAL RELATIONSHIP SCALE
(Braiker & Kelly, 1979)

The following questions ask about certain aspects of your relationship with your spouse. Please answer these questions for the present time in your relationship. Circle the number which best represents your view of your relationship.

- | | | |
|-----|--|--|
| 1. | To what extent do you have a sense of “belonging with your partner”? | <u>1 2 3 4 5 6 7 8 9</u>
Not at all Very much |
| 2. | How often do you and your partner argue with each other? | <u>1 2 3 4 5 6 7 8 9</u>
Very Frequently
Infrequently |
| 3. | How much do you feel you “give” to the relationship? | <u>1 2 3 4 5 6 7 8 9</u>
Very little Very much |
| 4. | To what extent do you try to change things about your partner that bother you (e.g., behaviors, attitudes, etc.) ? | <u>1 2 3 4 5 6 7 8 9</u>
Not at all Very much |
| 5. | To what extent do you love your partner at this stage? | <u>1 2 3 4 5 6 7 8 9</u>
Not at all Very much |
| 6. | To what extent do you feel that things that happen to your partner also affect or are important to you? | <u>1 2 3 4 5 6 7 8 9</u>
Not at all Very much |
| 7. | How often do you feel angry or resentful toward your partner? | <u>1 2 3 4 5 6 7 8 9</u>
Never Very often |
| 8. | To what extent do you feel that your relationship is somewhat unique compared to others you’ve been in? | <u>1 2 3 4 5 6 7 8 9</u>
Not at all Very much |
| 9. | How committed do you feel toward your partner? | <u>1 2 3 4 5 6 7 8 9</u>
Not at all Extremely |
| 10. | How close do you feel toward your partner? | <u>1 2 3 4 5 6 7 8 9</u>
Not at all close Extremely
close |
| 11. | How much do you need your partner at this stage? | <u>1 2 3 4 5 6 7 8 9</u>
Not at all Very much |
| 12. | How sexually intimate are you with your partner? | <u>1 2 3 4 5 6 7 8 9</u>
Not at all Extremely |

13. How attached do you feel to your partner?
1 2 3 4 5 6 7 8 9
 Not at all Very much
14. When you and your partner argue, how serious are the problems or arguments?
1 2 3 4 5 6 7 8 9
 Not serious Very serious
15. To what extent do you communicate negative feelings toward your partner (e.g., anger, dissatisfaction, frustration, etc.)?
1 2 3 4 5 6 7 8 9
 Not at all Very much
16. How confused are you about your feelings toward your partner?
1 2 3 4 5 6 7 8 9
 Not confused Very confused
17. To what extent do you reveal or disclose very intimate things about yourself or personal feelings to your partner?
1 2 3 4 5 6 7 8 9
 Very Frequently
 Infrequently
18. How much do you think or worry about losing some of your independence by getting involved with your partner?
1 2 3 4 5 6 7 8 9
 Not at all Very much
19. How much time do you and your partner spend discussing and trying to work out problems between you?
1 2 3 4 5 6 7 8 9
 Not very much Very much
20. How much time do you and your partner talk about the quality of your relationship -- for example, how good it is, how satisfying, how to improve it, etc.?
1 2 3 4 5 6 7 8 9
 Not very much Very much
21. How ambivalent or unsure are you about continuing in the relationship with your partner?
1 2 3 4 5 6 7 8 9
 Not at all Extremely
22. To what extent do you feel that your partner demands or requires too much of your time and attention?
1 2 3 4 5 6 7 8 9
 Not at all Very much
23. To what extent do you try to change your behavior to help solve certain problems between you and your partner?
1 2 3 4 5 6 7 8 9
 Not at all Very much
24. To what extent do you feel "trapped" or pressured to continue in the relationship?
1 2 3 4 5 6 7 8 9
 Not at all Very much
25. How much do you tell your partner what you want or need from the relationship?
1 2 3 4 5 6 7 8 9
 Not at all Very much

APPENDIX A.2

CENTER FOR EPIDEMIOLOGICAL STUDIES DEPRESSION SCALE (CES-D)
(Radloff, 1975)

Instructions: Below is a list of the ways you might have felt or behaved recently. Using the scale provided, please circle the number that indicates how often you have felt this way during the PAST WEEK.

<u>0</u>	<u>1</u>	<u>2</u>	<u>3</u>
Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)

- | | | | | |
|--|---|---|---|---|
| 1. I was bothered by things that don't usually bother me. | 0 | 1 | 2 | 3 |
| 2. I did not feel like eating; my appetite was poor | 0 | 1 | 2 | 3 |
| 3. I felt that I could not shake off the blues even with help from my family or friends. | 0 | 1 | 2 | 3 |
| 4. I felt that I was just as good as other people. | 0 | 1 | 2 | 3 |
| 5. I had trouble keeping my mind on what I was doing. | 0 | 1 | 2 | 3 |
| 6. I felt depressed. | 0 | 1 | 2 | 3 |
| 7. I felt that everything was an effort. | 0 | 1 | 2 | 3 |
| 8. I felt hopeful about the future. | 0 | 1 | 2 | 3 |
| 9. I thought my life had been a failure. | 0 | 1 | 2 | 3 |
| 10. I felt fearful. | 0 | 1 | 2 | 3 |
| 11. My sleep was restless. | 0 | 1 | 2 | 3 |
| 12. I was happy. | 0 | 1 | 2 | 3 |
| 13. I talked less than usual. | 0 | 1 | 2 | 3 |
| 14. I felt lonely. | 0 | 1 | 2 | 3 |
| 15. People were unfriendly. | 0 | 1 | 2 | 3 |
| 16. I enjoyed life. | 0 | 1 | 2 | 3 |
| 17. I had crying spells. | 0 | 1 | 2 | 3 |
| 18. I felt sad. | 0 | 1 | 2 | 3 |
| 19. I felt that people dislike me. | 0 | 1 | 2 | 3 |
| 20. I could not get "going." | 0 | 1 | 2 | 3 |

APPENDIX A.3

INFANT BEHAVIOR QUESTIONNAIRE (IBQ)
(Rothbart, 1978)

INSTRUCTIONS: Please read carefully before answering:

As you read each description of the baby's behavior below, please indicate how often the baby did this during the LAST WEEK (the past seven days) by circling one of the numbers in the right column. These numbers indicate how often you observed the behavior described during the last week.

1	2	3	4	5	6	7	9
Never	Very rarely	Less than half the time	About half the time	More than half the time	Almost always	Always	Does not apply

IMPORTANT NOTE: The "Does Not Apply" (9) column is used when you did not see the baby in the situation described during the last week. For example, if the situation mentions the baby having to wait for food or liquids and there was no time during the last week when the baby had to wait, circle the (9) column. "Does Not Apply" is different from "Never" (1). "Never" is used when you saw the baby in the situation but the baby never engaged in the behavior listed during the last week. For example, if the baby did have to wait for food or liquids at least once but never cried loudly while waiting, circle the (1) column.

Please be sure to circle a number for every item.

Feeding

When having to wait for food or liquids during the last week, how often did the baby:

- | | | | | | | | | |
|-----------------------|---|---|---|---|---|---|---|---|
| 1. seem not bothered? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |
| 2. show mild fussing? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |
| 3. cry loudly? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |

During feeding, how often did the baby:

- | | | | | | | | | |
|------------------------|---|---|---|---|---|---|---|---|
| 4. lie or sit quietly? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |
| 5. squirm or kick? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |

During feeding, how often did the baby:

- | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 6. wave arms? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |
| 7. fuss or cry when s/he had enough to eat? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |
| 8. fuss or cry when given a disliked food? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |

1	2	3	4	5	6	7	9
Never	Very rarely	Less than half the time	About half the time	More than half the time	Almost always	Always	Does not apply

When given a new food or liquid, how often did the baby:

9. accept it immediately? 1 2 3 4 5 6 7 9
10. reject it by spitting out, closing mouth, etc.? 1 2 3 4 5 6 7 9
11. not accept it no matter how many times offered? 1 2 3 4 5 6 7 9

Sleeping

Before falling asleep at night during the last week, how often did the baby:

12. show no fussing or crying? 1 2 3 4 5 6 7 9

During sleep, how often did the baby:

13. toss about in the crib? 1 2 3 4 5 6 7 9
14. move from the middle to the end of the crib? 1 2 3 4 5 6 7 9
15. sleep in one position only? 1 2 3 4 5 6 7 9

After sleeping, how often did the baby:

16. fuss or cry immediately? 1 2 3 4 5 6 7 9
17. play quietly in crib? 1 2 3 4 5 6 7 9
18. coo and vocalize for periods of 5 minutes or longer? 1 2 3 4 5 6 7 9
19. cry if someone doesn't come within a few minutes? 1 2 3 4 5 6 7 9

How often did the baby:

20. seem angry (crying and fussing) when you left him/her in the crib? 1 2 3 4 5 6 7 9
21. seem content when left in the crib? 1 2 3 4 5 6 7 9
22. cry or fuss before going to sleep for naps? 1 2 3 4 5 6 7 9

1	2	3	4	5	6	7	9
Never	Very rarely	Less than half the time	About half the time	More than half the time	Almost always	Always	Does not apply

Bathing and Dressing

When being dressed or undressed during the last week, how often did the baby:

- | | | | | | | | | |
|-------------------------------------|---|---|---|---|---|---|---|---|
| 23. wave his/her arms and kick? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |
| 24. squirm and/or try to roll away? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |
| 25. smile or laugh? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |

When put into the bath water, how often did the baby:

- | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 26. startle (gasp, throw out arms; stiffen body, etc.)? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |
| 27. smile? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |
| 28. laugh? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |
| 29. have a surprised expression? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |
| 30. splash or kick? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |
| 31. turn body and/or squirm? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |

When face was washed, how often did the baby:

- | | | | | | | | | |
|---------------------|---|---|---|---|---|---|---|---|
| 32. smile or laugh? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |
| 33. fuss or cry? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |

When hair was washed, how often did the baby:

- | | | | | | | | | |
|---------------------|---|---|---|---|---|---|---|---|
| 34. smile or laugh? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |
| 35. fuss or cry? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |

1	2	3	4	5	6	7	9
Never	Very rarely	Less than half the time	About half the time	More than half the time	Almost always	Always	Does not apply

How often during the last week did the baby:

36. look at pictures in books and/or magazines for 2-5 minutes at a time? 1 2 3 4 5 6 7 9
37. look at pictures in books and/or magazines for 5 minutes or longer at a time? 1 2 3 4 5 6 7 9
38. stare at a mobile, crib bumper or picture for 5 minutes or longer? 1 2 3 4 5 6 7 9
39. play with one toy or object for 5-10 minutes? 1 2 3 4 5 6 7 9
40. play with one toy or object for 10 minutes or longer? 1 2 3 4 5 6 7 9
41. spend time just looking at playthings? 1 2 3 4 5 6 7 9
42. repeat the same sounds over and over again? 1 2 3 4 5 6 7 9
43. laugh aloud in play? 1 2 3 4 5 6 7 9
44. smile or laugh when tickled? 1 2 3 4 5 6 7 9
45. cry or show distress when tickled? 1 2 3 4 5 6 7 9
46. repeat the same movement with an object for 2 minutes or longer (e.g., putting a block in a cup, kicking or hitting a mobile)? 1 2 3 4 5 6 7 9

When something the baby was playing with had to be removed, how often did s/he:

47. cry or show distress for a time? 1 2 3 4 5 6 7 9
48. cry or show distress for several minutes or longer? 1 2 3 4 5 6 7 9
49. seem not bothered? 1 2 3 4 5 6 7 9

When tossed around playfully, how often did the baby:

50. smile? 1 2 3 4 5 6 7 9
51. laugh? 1 2 3 4 5 6 7 9

1	2	3	4	5	6	7	9
Never	Very rarely	Less than half the time	About half the time	More than half the time	Almost always	Always	Does not apply

During a peekaboo game, how often did the baby:

52. smile? 1 2 3 4 5 6 7 9

53. laugh? 1 2 3 4 5 6 7 9

Daily Activities

How often during the last week did the baby:

54. cry or show distress at a loud sound (blender, vacuum cleaner, etc.)? 1 2 3 4 5 6 7 9

55. cry or show distress at a change in parents' appearance (glasses off, shower cap on, etc.)? 1 2 3 4 5 6 7 9

56. when in a position to see the television set, look at it for 2-5 minutes at a time? 1 2 3 4 5 6 7 9

57. when in a position to see the television set, look at it for 5 minutes or longer? 1 2 3 4 5 6 7 9

58. protest being put in a confining place (infant seat, play pen, car seat, etc.)? 1 2 3 4 5 6 7 9

59. protest being put in a confining place (infant seat, play pen, car seat, etc.)? 1 2 3 4 5 6 7 9

When being held, how often did the baby:

62. squirm, pull away or kick? 1 2 3 4 5 6 7 9

When placed on his/her back, how often did the baby:

63. fuss or protest? 1 2 3 4 5 6 7 9

64. smile or laugh? 1 2 3 4 5 6 7 9

65. lie quietly? 1 2 3 4 5 6 7 9

66. wave arms and kick? 1 2 3 4 5 6 7 9

67. squirm and/or turn body? 1 2 3 4 5 6 7 9

When the baby wanted something, how often did s/he:

68. become upset when s/he could not get what s/he wanted? 1 2 3 4 5 6 7 9

69. have tantrums (crying, screaming, face red, etc.) when s/he did not get what s/he wanted? 1 2 3 4 5 6 7 9

1	2	3	4	5	6	7	9
Never	Very rarely	Less than half the time	About half the time	More than half the time	Almost always	Always	Does not apply

When placed in an infant seat or car seat, how often did the baby:

70. wave arms and kick? 1 2 3 4 5 6 7 9
71. squirm and turn body? 1 2 3 4 5 6 7 9
72. lie or sit quietly? 1 2 3 4 5 6 7 9
73. show distress at first; then quiet down? 1 2 3 4 5 6 7 9

When you returned from having been away and the baby was awake, how often did s/he:

74. smile or laugh? 1 2 3 4 5 6 7 9

When introduced to a strange person, how often did the baby:

75. cling to a parent? 1 2 3 4 5 6 7 9
76. refuse to go to the stranger? 1 2 3 4 5 6 7 9
77. hang back from the stranger? 1 2 3 4 5 6 7 9
78. never "warm up" to the stranger? 1 2 3 4 5 6 7 9
79. approach the stranger at once? 1 2 3 4 5 6 7 9
80. smile or laugh? 1 2 3 4 5 6 7 9

When introduced to a dog or cat, how often did the baby:

81. cry or show distress? 1 2 3 4 5 6 7 9
82. smile or laugh? 1 2 3 4 5 6 7 9
83. approach at once? 1 2 3 4 5 6 7 9

1	2	3	4	5	6	7	9
Never	Very rarely	Less than half the time	About half the time	More than half the time	Almost always	Always	Does not apply

Soothing Techniques

Have you tried any of the following soothing techniques in the last two weeks? If so, how often did the method soothe the baby? Circle (9) if you did not try the technique during the LAST TWO WEEKS.

- | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|
| 84. rocking | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |
| 85. holding | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |
| 86. singing or talking | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |
| 87. walking with the baby | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |
| 88. giving the baby a toy | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |
| 89. showing the baby something to look at | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |
| 90. patting or gently rubbing some part of the baby's body | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |
| 91. offering food or liquid | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |
| 92. offering baby his/her security object | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |
| 93. changing baby's position | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |
| 94. other (specify) _____ | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 9 |

APPENDIX B

Tables

1. Means and Standard Deviations of Independent and Dependent Variables
2. Correlations among Wives' and Husbands' Time 2 Infant Temperament Ratings
3. Correlations among Wives' and Husbands' Time 1 Marital Conflict and Love Scores, Prenatal Well-Being, and Time 2 Infant Temperament Ratings
4. Hierarchical Regression Analysis of Time 2 Wives' Reported Infant Smiling & Laughter from Time 1 Wives' Love, Conflict and Love x Conflict Interaction
5. Hierarchical Regression Analysis of Time 2 Husbands' Reported Infant Smiling & Laughter from Time 1 Husbands' Love, Conflict and Love x Conflict Interaction
6. Hierarchical Regression Analysis of Time 2 Wives' Reported Infant Soothability from Time 1 Wives' Love, Conflict and Love x Conflict Interaction
7. Hierarchical Regression Analysis of Time 2 Husbands' Reported Infant Soothability from Time 1 Husbands' Love, Conflict and Love x Conflict Interaction
8. Hierarchical Regression Analysis of Time 2 Wives' Reported Infant Smiling & Laughter from Time 1 Wives' Depression
9. Hierarchical Regression Analysis of Time 2 Husbands' Reported Infant Smiling & Laughter from Time 1 Husbands' Depression
10. Hierarchical Regression Analysis of Time 2 Husbands' Reported Infant Smiling & Laughter from Time 1 Husbands' Love, Conflict, and Depression

Table B.1

Means and Standard Deviations of Independent and Dependent Variables (N=153)

	Husbands		Wives		t
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	
<u>INDEPENDENT VARIABLES</u>					
<u>(N=153)</u>					
T1 Marital Love	7.98	.73	8.11	.57	-1.77 ⁺
T1 Marital Conflict	3.33	1.07	3.62	1.12	-2.27*
T1 Depression	.46	.38	.80	.45	7.25***
T1 Work Hours	47.71	7.88	40.47	7.33	8.31***
<u>DEPENDENT VARIABLES</u>					
	(N=133)		(N=135)		
T2 Infant Smiling & Laughter	5.44	.68	5.45	.73	-.11
T2 Infant Soothability (N=132/134)	5.08	.88	5.33	.88	-2.35*

Table B.2

Correlations among Wives' and Husbands' 12-Month (Time 2) Infant Temperament Ratings (N=130)

		HUSBAND	
		T2 Smiling	T2 Soothability
WIFE	T2 Smiling	.19*	-.003
	T2 Soothability	.08	.13

+ p < .10, *p < .05, **p < .01, ***p < .001

Table B.3

Correlations among Wives' and Husbands' Prenatal (Time 1) Marital Conflict and Love Scores, Prenatal Well-Being, and 12-Month (Time 2) Infant Temperament Ratings

		Time 2 Infant Temperament			
		WIFE		HUSBAND	
		Smiling (N=135)	Soothability (N=134)	Smiling (N=133)	Soothability (N=132)
WIFE					
	T1 Marital Conflict	-.21*	.01	-.10	.07
	T1 Marital Love	.23**	.28**	.05	-.02
	T1 Depression	-.09	-.05	-.15 ⁺	.08
	T1 Work Hours	.13	-.08	-.003	.03
HUSBAND					
	T1 Marital Conflict	-.03	.03	-.15 ⁺	.04
	T1 Marital Love	-.01	.11	.25**	.20*
	T1 Depression	-.01	-.19*	-.33***	.07
	T1 Work Hours	-.03	.09	.03	-.19*

+ p < .10, * p < .05, ** p < .01, *** p < .001

Table B.4

Hierarchical Regression Analysis of Time 2 Wives' Reported Infant Smiling & Laughter from Time 1 Wives' Love, Conflict, and Love x Conflict Interaction (N=135)

Variable	1			2			3		
	B	SE B	β	B	SE B	β	B	SE B	β
T1 Work Hrs	.31	.20	.13	.32	.19	.14	.31	.20	.13
T1 Love				.24*	.12	.19*	.26*	.12	.21*
T1 Conflict				-.08	.06	-.12	-.08	.06	-.12
T1 Love x Conflict							-.05	.09	-.05
Change in R ²					.070**			.002	
R ²		.018			.088**			.090	

+ p< .10, *p<.05, **p<.01, ***p<.001

Table B.5

Hierarchical Regression Analysis of Time 2 Husbands' Reported Infant Smiling & Laughter from Time 1 Husbands' Love, Conflict, and Love x Conflict Interaction (N=133)

Variable	1			2			3		
	B	SE B	β	B	SE B	β	B	SE B	β
T1 Work Hrs	.26	.68	.03	.05	.67	.01	.07	.68	.01
T1 Love				.22**	.08	.23**	.24**	.09	.24**
T1 Conflict				-.06	.06	-.11	-.07	.06	-.11
T1 Love x Conflict							-.06	.08	-.07
Change in R ²					.072**			.004	
R ²		.001			.073**			.077	

+ p< .10, *p<.05, **p<.01, ***p<.001

Table B.6

Hierarchical Regression Analysis of Time 2 Wives' Reported Infant Soothability from Time 1 Wives' Love, Conflict, and Love x Conflict Interaction (N=135)

Variable	1			2			3		
	B	SE B	β	B	SE B	B	B	SE B	β
T1 Work Hrs	-.22	.24	-.08	-.15	.23	-.05	-.19	.23	-.07
T1 Love				.51***	.14	.34***	.59***	.15	.39***
T1 Conflict				.12	.07	.15	.12	.07	.15
T1 Love x Conflict							-.18	.11	-.14
Change in R ²					.094**			.018	
R ²		.006			.101**			.118	

+ p < .10, *p < .05, **p < .01, ***p < .001

Table B.7

Hierarchical Regression Analysis of Time 2 Husbands' Reported Infant Soothability from Time 1 Husbands' Love, Conflict, and Love x Conflict Interaction (N=133)

Variable	1			2			3		
	B	SE B	β	B	SE B	B	B	SE B	β
T1 Work Hrs	-1.93*	.87	-.19*	-2.00*	.86	-.20*	-2.04*	.86	-.20*
T1 Love				.28*	.10	.23*	.25*	.11	.20*
T1 Conflict				.04	.07	.06	.05	.07	.07
T1 Love x Conflict							.13	.10	.11
Change in R ²					.049*			.011	
R ²		.036*			.086*			.096	

+ p < .10, *p < .05, **p < .01, ***p < .001

Table B.8

Hierarchical Regression Analysis of Time 2 Wives' Reported Infant Smiling & Laughter from Time 1 Wives' Depression (N=135)

Variable	1			2		
	B	SE B	β	B	SE B	β
T1 Work Hours	.31	.198	.134	.286	.20	.124
T1 Depression				-.117	.144	-.071
Change in R ²					.005	
R ²		.018			.023	

+ p< .10, *p<.05, **p<.01, ***p<.001

Table B.9

Hierarchical Regression Analysis of Time 2 Husbands' Reported Infant Smiling & Laughter from Time 1 Husbands' Depression (N=153)

Variable	1			2		
	B	SE B	β	B	SE B	β
T1 Work Hours	.262	.683	.034	-1.07	.711	-.136
T1 Depression				-.73***	.168	-.39***
Change in R ²					.126***	
R ²		.001			.127***	

+ p< .10, *p<.05, **p<.01, ***p<.001

Table B.10

Hierarchical Regression Analysis of Time 2 Husbands' Reported Infant Smiling & Laughter from Time 1 Husbands' Love, Conflict, and Depression (N=133)

Variable	1			2			3		
	B	SE B	β	B	SE B	B	B	SE B	B
T1 Work Hrs	.262	.68	.03	.05	.67	.01	-1.01	.705	-.13
T1 Love				.22**	.08	.23**	.147*	.068	.170*
T1 Conflict				-.06	.06	-.11	-.03	.05	-.05
T1 Depression							-.63**	.17	-.34**
Change in R^2					.072**			.086***	
R^2		.001			.086**			.159***	

+ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

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